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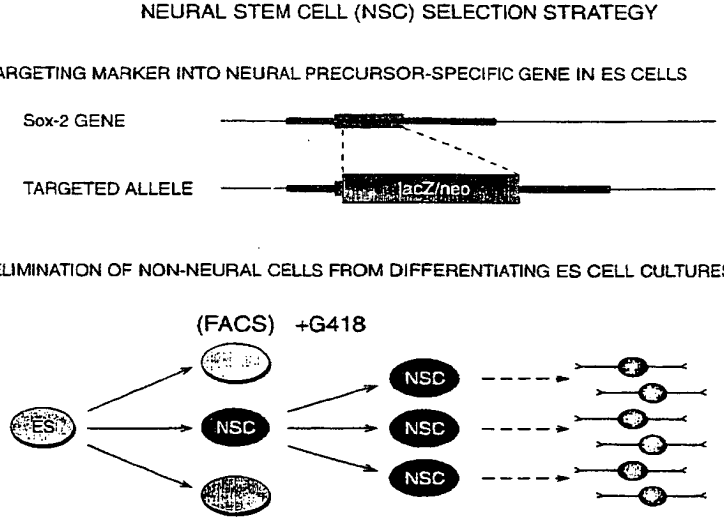
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *With international search report.-*

[Continued on next page]

(54) Title: SELECTION OF LINEAGE SPECIFIC CELLS AFTER DIFFERENTIATION OF PROGENITOR CELLS



(57) Abstract: A method for generating a culture that is purified or enriched in respect of cells of a selected lineage is described in which a selectable marker, which is differentially expressed in cells of the selected lineage compared with its expression in other cells, is introduced into a multipotential cell and the multipotential cell is cultured to induce differentiation of the multipotential cell into a cell of the selected lineage or into a mixture of cells including cells of the selected lineage, or is cultured to induce preferential survival of cells of the selected lineage. Those cells that express the selectable marker are then selected for. Progenitors of selected lineage are also described as is the use of the method in assay techniques.

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AM

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 99/01136

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 C12N15/65 C12N15/85 C12N5/10 C12N5/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CONNEALLY E ET AL: "Rapid and efficient selection of human hematopoietic cells expressing murine heat-stable antigen as an indicator of retroviral-mediated gene transfer." BLOOD, (1996 JAN 15) 87 (2) 456-64. JOURNAL CODE: A8G. ISSN: 0006-4971., XP002112125 abstract ---	1
X	CHENG L ET AL: "Sustained gene expression in retrovirally transduced, engrafting human hematopoietic stem cells and their lympho-myeloid progeny." BLOOD, (1998 JUL 1) 92 (1) 83-92., XP002112126 abstract ---	1

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 August 1999	19. 11. 99

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Hardon, E

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 99/01136

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	LI M ET AL: "Generation of purified neural precursors from embryonic stem cells by lineage selection." CURRENT BIOLOGY, (1998 AUG 27) 8 (17) 971-4. JOURNAL CODE: B44. ISSN: 0960-9822., XP002112127 ENGLAND: United Kingdom the whole document	1-18, 23-28, 32,33
P,X	WO 99 10488 A (WAHL GEOFFREY ;GORMAN STEPHEN O (US); SALK INST FOR BIOLOGICAL STU) 4 March 1999 (1999-03-04) example 5	1
A	WO 94 02593 A (STEMPLE DEREK L ;ANDERSON DAVID J (US); CALIFORNIA INST OF TECHN () 3 February 1994 (1994-02-03) the whole document	1-18, 23-28, 32,33
A	WO 93 18137 A (SYSTEMIX INC) 16 September 1993 (1993-09-16) the whole document	1-18, 23-28, 32,33
A	WO 97 04118 A (UNIV PARIS CURIE ;KLATZMANN DAVID (FR); SALMON PATRICK (FR); BOYER) 6 February 1997 (1997-02-06) the whole document	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 99/01136

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 36
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
Although claims 36 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1 - 18, 23 - 28, 32 - 33

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-18, 23-28, 32-33

A method of generating a culture that is purified or enriched in respect of cells of a selected lineage, comprising introducing in a progenitor a selectable marker that is differentially expresed in the slected lineage, culturing the progenitors to induce differentiation and selecting the cells that expres the marker.

2. Claims: 19-21; 29-31 in part

A composition containing a plurality of cells, wherein a majority of the cells are progenitor cells of a selected lineage.

3. Claims: 22; 29-31 in part, 34-36

An isolated neural progenitor cell.

4. Claims: 37-41

A method for amplifying a purified population of progenitor cells of a selected lineage, comprising maintaining the cells in culture in the presence of a mitogen and a growth factor.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB 99/01136

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